

SOME EAST AFRICAN DIPTERA OF THE FAMILIES ACRO CERIDAE, ASTEIIDAE AND CHLOROPIDAE.¹By CURTIS W. SABROSKY,² Washington, D.C.

A small collection of certain families of Diptera from the East African Expedition of the Staatliches Museum für Naturkunde in Stuttgart was made available for study through the kindness of Dr. E. Lindner, leader of the expedition. One genus and four species are here described as new, with type material in the Stuttgart Museum except as noted. Several other specimens probably represent new species, but the genera to which they belong have not been studied sufficiently, or adequate series are necessary.

Acroceridae

This family has been called Cyrtidae by Sack (1936, in Lindner's "Die Fliegen der palaearktischen Region") and other authors, but Acroceridae is the oldest proposed family name based on a valid included genus. I prefer that spelling to Acroceratidae, following the reasonable suggestions of Grensted (1948, Ent. Monthly Mag. 84: 280-281).

I know of only one published record of the genus *Acrocera* from the Ethiopian Region, *Acrocera* (*Paracrocera*) *globulus* (Panzer), recorded by Brunetti (1926, Ann. & Mag. Nat. Hist., ser. 9, 18: 587) from "Abyssinia, 6.XII.1907." The species described below is therefore of unusual interest.

***Acrocera lindneri* n. sp.**

Acrocera with trivittate mesonotum, and second longitudinal vein incompletely developed.

Female.—Predominantly black, with conspicuous, deep yellow to orange markings and short yellowish hairs. Head black. Mesonotum shining, orange, with three broad black stripes which are fused for a short distance in front of scutellum, the median stripe complete in full breadth from neck to scutellum, but the lateral stripes anteriorly abbreviated, their broadly rounded to subquadrate anterior ends well posterior to humeri, and posteriorly slightly convergent toward the inner angles of the postalar calli; no supra-

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alar vittulae, each orange lateral area nearly as wide as a stripe; humeri and propleura white to pale yellowish; postalar calli chiefly black, the posterior third yellow to whitish; pleura, scutellum and metanotum black. Dorsum of abdomen marked with black and orange, the pattern resembling that of *A. trigramma* Loew (Sack, 1936, in Lindner, vol. 4, family 21, plate 2, fig. 11), but more extensively black, segments 2 and 3 (apparent 1 and 2) with a large mesal diamond-shaped black spot formed by a basal triangle on segment 3 and a similar but reversed apical triangle on the second segment, the latter with two orange spots reduced in size by the mesal black spot plus inward extensions of the anterolateral black areas. Venter predominantly black, the sternites with white to yellowish posterior margins, especially on mesal third. Basal segments of ovipositor shining black, the valves light yellow, slender and acuminate, almost as in *A. arizonensis* Cole (cf. Cole, 1919, Trans. Amer. Ent. Soc. 45: plate 9, fig. 28). Legs predominantly light yellow, the coxae brown, a few faint brownish areas on femora and tibiae but apparently no definite pattern, the claws and distal half of fifth tarsal segment on all legs black. Squamae grayish. Halteres cream yellow.

Wings hyaline, veins strong, brown to black; venation approximately as figured for *A. sanguinea* (Sack, op. cit., plate 3, fig. 20), but the anterior branch of third vein continues to costa in full strength, the penultimate section of third vein is barely over one-third the length of its anterior branch, and the second vein is weaker than the others and incomplete. In the left wing the second vein is of almost full length, but is not joined at either end; in the right wing it is joined at its base, but fails slightly to reach the costa.

Length, 4 mm.

Holotype, female, Kisangara, at the south foot of the Usambara Mts., Tanganyika, Dec. 31–Jan. 1.

The species is very close to *A. trigramma* Loew from Central and Southern Europe, but the latter has complete second vein and yellowish scutellum. The wing resembles that of *A. nigrofemorata* Meigen (Meigen, 1822, Syst. Besch. 3: plate 24, fig. 10), though the second vein is much longer in *lindneri*, and former species is quite distinct in other ways (black thorax, black femora, and reddish abdomen with a median row of small to medium-sized black basal triangles on segments two to four.)

The mesonotum of *lindneri* also resembles that of the North American *A. subfasciata* Westwood (cf. Cole, 1919, op. cit., plate

13, fig. 38), which, like *trigramma*, has complete second vein. It is a noteworthy fact in this family that in certain of the genera which are extremely widespread in distribution, the species of distant regions are often astonishingly similar.

Asteiidae

Asteia nitida Duda—Female, Msingi, 1400 meters, at southwest foot of Kilimanjaro, Tanganyika, May 1–19. This species was described from a long series of both sexes from Mujenje, Uganda.

Chloropidae

The only comprehensive publication on the Ethiopian fauna in this family is that of Becker (1910, Ann. Mus. Nat. Hung. 8: 377–443), now far out of date. However, the writer's review of the Chloropidae of the Ruwenzori Expedition of the British Museum (Nat. Hist.) (Sabrosky, 1951, Ruwenzori Expedition 1934–5, vol. 2, no. 7, pp. 711–828) contains keys to the Ethiopian genera of the two subfamilies, the Chloropinae (pp. 715–717) and the Oscinellinae (pp. 743–747), and keys for the Ethiopian species of a number of the genera.

The present collection is a small one but surprisingly varied, with the 34 specimens representing 23 or more species of eleven genera, of which three species and one genus are so unusually distinct that they are described as new.

With two exceptions, all specimens were collected in extreme northeastern Tanganyika, near the Kenya border. One female of *Mepachymerus tenellus* (Beck.) was taken at Dar-es-Salaam, Tanganyika, Dec. 11–20, and two males and one female of *Lagaroceras sequens* Beck. at Mombasa, Kenya, December 9th. Published locality records for most Ethiopian Chloropidae are few in number, and the following may therefore be of interest to record for the three principal localities at which collections were made:

Kware, a small stream southwest of Moshi, south of Kilimanjaro, Dec. 27–Jan. 21: *Pachylophus punctifemur* Sabr., *P. sp. near contractus* Beck., *Parectecephala varifrons* Lamb, *Lagaroceras pulchellum* Lamb, *Elachiptera (E.) occipitalis* Beck., *E. (Melanochaeta) scapularis* (Adams), *E. (M.) flavofrontata* (Beck.), *E. (M.) dubia* Lamb, *Rhodesiella subditicus* (Lamb), *R. aberrans* n. sp., *Siphunculina punctifrons* n. sp., *Kwarea pallidihirta* n. gen., n. sp.

Msingi, 1400 meters, at southwest foot of Kilimanjaro, Jan. to June: *Chlorops* sp., *Rhodesiella cuneata* (Becker), *Elachiptera*

(*M.*) *vulgaris* (Adams) (also collected at Ngerengere, Dec. 23), *Oscinella mesotibialis* Sabr., and two or three species of a difficult group of *Oscinella* with narrow wings, near *dimidiofrit* Beck. and *mesopleuralis* Sabr.

Ngaruka, west of Meru, Jan. 29 to Feb. 14: *Hippelates stigmaticus* Lamb, *Rhodesiella tarsalis* Adams, *Elachiptera* (*E.*) *simplificipes* Beck., *E. (M.) dubia* Lamb.

Hippelates n. sp. near *stigmaticus* Beck.

Male, Makoa, 1200 meters, at southwest foot of Kilimanjaro, Feb. 22-23. This specimen is apparently the same species as the female recorded by Sabrosky (1951, op. cit., pp. 751-752) from the Namwamba Valley, Ruwenzori Range in Uganda. A review of the still small amount of material which has slowly accumulated indicates that there are at least five distinct but closely related species in the Ethiopian region, but their sure differentiation is complicated by variation and by the sexual dimorphism, in some species but not in others, in the color of the third antennal segment. In *stigmaticus*, that segment is yellow in both sexes. In the Makoa male, however, the dorsal half is black, and, if I have correctly associated it with other material before me, the female of this species has the segment entirely black.

Pachylophus punctifemur Sabrosky, new status

Pachylophus proximus punctifemur Sabrosky, 1945, Proc. Zool. Soc. London 114: 459 (Mt. Meru, Tanganyika).

This was originally described from two specimens as a variety with predominantly yellow to orange legs and head. The study of additional material reveals that what appeared to be variation in the pollinosity of mesopleura and mesonotum is actually the consistent mark of a distinct species. The color of the hind legs is somewhat variable, perhaps due in part to maturity. The hind femur and tibia may be entirely black, or predominantly orange-yellow with an irregular black spot on the outer surface as originally noted.

The specimen from Mt. Elgon which I recorded as *P. proximus* in the Ruwenzori report (l.c., p. 718) is actually *punctifemur* with considerably darkened hind femur and hind tibia. I have also seen *punctifemur* from 925 meters at Kitembo, Belgian Congo [Inst. Parcs Nat. Congo Belge].

Proximus and *punctifemur* are similar in most respects, including the form of the head and frontal triangle, size of hind femur,

color of halteres, etc. They may be distinguished as follows:

- Mesopleuron entirely polished, at most a tiny spot of pollen on the upper edge of the extreme posterodorsal angle; fore coxa and all femora black, except perhaps narrowly at knees and extreme bases; mesonotum predominantly shining black, sharply outlining the gray pollinose areas of narrow dorso-central stripes, humeri, notopleura, anterior connections of humeri and stripes, and the narrow margins of the mesonotal suture *P. proximus* Adams
- Mesopleuron with a distinct though small patch of gray pollen in the posterodorsal corner, the spot approximately equal in area to the polished triangular area on the cheek; fore coxa and fore and mid femora yellow, the hind femur variable in color; mesonotum with gray stripes, but with intervening areas dull brownish gray and the stripes thus not sharply distinct, the whole duller than the foregoing *P. punctifemur* Sabr.

Rhodesiella aberrans n. sp.

Rhodesiella of aberrant habitus, with somewhat depressed head and body, thorax with pale appressed hairs, long axis of eye diagonal, and wing venation unique in the genus.

Male, female.—Entirely shining black except as follows: Front along anterior margin, face, anterior portion of cheek, palp and antenna reddish to orange, the third antennal segment slightly browned along upper margin; legs including all coxae predominantly bright orange, the fore tibia and tarsus, distal segment of mid tarsus, and distal two segments of hind tarsus black, all femora with trace of infuscation above at the knees, and the hind tibia at its apex; halter yellow; wing clear, slightly infuscated narrowly along costal margin between apices of first and third veins; hairs and bristles of head and thorax whitish to pale yellow except for the outer vertical, posterior notopleural, postalar, posterior dorso-central and apical scutellar bristles, which are black.

Head broader than thorax, and twice as broad as long; front slightly broader than an eye and .38 times the width of head, but obviously longer than broad; frontal triangle large, narrowly separated from eyes at vertex and nearly reaching anterior margin of front, its sides very slightly convex, but the curvature exaggerated by the rounded apex, the surface broken by longitudinal wrinkling on mesal two-thirds; each side of triangle with narrow flattened margin with row of about twelve short pale hairs set in minute punctures; front outside of triangle smooth and subshining, with

a few pale appressed hairs; nine to ten short reclinate orbitals on each side, about equal in length to hairs bordering triangle; ocellars and postverticals pale, short; outer verticals well developed. Eye bare, in profile the long axis diagonal and nearly 1.75 times the narrowest axis; front strongly sloping, twice the length of face, the height of head at base of antenna less than three-fifth its height at vertex; from directly in front, the flattening and broadening especially noticeable, the head being 2.6 times as wide as high. Cheek narrow, one-third the breadth of the small third antennal segment. Face concave, weakly carinate. Arista short pubescent.

Mesonotum approximately as broad as long, the disk posteriorly and the scutellum somewhat flattened, both densely covered with piliferous punctures, the hairs short, pale and closely appressed. Scutellum large, .8 times as long as broad at base, and slightly over one-third as long as mesonotum, scarcely narrowing, and broadly rounded at apex. Mesopleuron and sternopleuron in part roughened and covered with pale hairs like those of dorsum, also a cluster of pale hairs at site of propleural bristle above base of fore coxa. Prosternum large and heavily sclerotized, deeply grooved in middle. Chaetotaxy: 0 + 1 notopleural, 1 postalar, 1 posterior dorsocentral, and one pair apical scutellars, the latter set on slightly enlarged bases near the midline, and cruciate at tips; subapical scutellars pale and little stronger than discal hairs, but apparently two pairs close together on the broadly rounded posterior margin of scutellum.

Legs short and thick, the fore coxa and fore femur somewhat incrassate; hind tibia without sensory area.

Wing venation unique in the genus: First vein extending nearly to middle of wing, the costal cell broadened; second vein straight and short, third vein convex toward costa, fourth vein straight, ending at or a trace before the apex of the wing; costal sectors one (humeral crossvein to apex of first vein) to four as 20:16:13:5.5; marginal cell very narrow, submarginal cell slightly broader but narrower than usual; first posterior cell unusually broad, its width at level of hind crossvein over twice the combined width of marginal and submarginal cells; small crossvein at right angles to costa and slightly beyond middle of discal cell, the hind crossvein diagonal, penultimate section of fourth vein slightly longer than ultimate section of fifth.

Length, 3 mm.

Holotype, male, Kware, Jan. 17-21; allotype and one paratype (abdomen missing), Ruvo, Nyasaland, April 13, 1916 (R. C. Wood). Holotype in Stuttgart Museum, allotype returned to

Commonwealth Institute of Entomology for ultimate deposit in the British Museum (Nat. Hist.), and paratype deposited in U. S. National Museum.

This species agrees with my generic characterization of *Rhodesiella* (Sabrosky, 1951, op. cit., p. 756) in having the eyes bare, surface of triangle glabrous (though roughened), postverticals erect and cruciate, ocellars proclinate and divergent (though shorter than usual), mesopleuron hairy, and no sensory area on the hind tibia. The arisal pubescence is much shorter than usual in the genus, the scutellum is broadly rounded and flattened rather than conical to subconical and convex, and I can see no trace of an anterior notopleural bristle. However, none of these are serious deviations from the characterization, especially when tendencies in other known species are considered. The flattened head and the wing venation do more to suggest another genus, but in my opinion they represent only one extreme of development in *Rhodesiella*. In the Oriental Region there are several species, such as *R. albicapilla* (Meijere) from Sumatra, which resemble *R. aberrans*, and others which approach it in some respects. Were one to propose even a subgenus for *aberrans*, which is a strong temptation because of its distinct habitus in the African fauna, I believe that one would find it increasingly difficult to define it as other species are brought into the picture, especially from the Orient.

Elachiptera (Melanochaeta) dubia Lamb

Two males, Kware, Dec. 27–Jan. 13; female, Ngaruka, Jan. 29–Feb. 14. This species was not included in the writer's key to the Ethiopian species (Sabrosky, 1951, op. cit., pp. 782–784), and in a footnote its probable position was erroneously indicated. I am indebted to Dr. F. van Emden of the Commonwealth Institute of Entomology for information which enables me to place it correctly. It is quite similar to, and in my key will run to the common *E. (M.) scapularis* (Adams), having the same black thorax with yellow humeri and propleura, but *dubia* is easily distinguished by having the ocellar tubercle polished, not pollinose, and by a small black anteroventral hind tibial spur, shorter than the diameter of the tibia at the location of the spur. It may further be noted that this species has a somewhat flattened scutellum suggestive of typical *Elachiptera*, but without distinct marginal tubercles at the bases of the bristles.

Siphunculina punctifrons n. sp.

Dull brown-gray pollinose species with polished black spot im-

mediately anterior to the median ocellus and considerable polished black areas on lower half of pleuron.

Male—Black except as follows: antenna except dorsal fourth to third, upper half of facial carina, large palp, fore coxa, ends of femora at the knees, all tibiae except for narrow median band on hind tibia and a less conspicuously marked band on mid tibia, and all tarsi except for brown distal segment, deep yellow; knob of halter pale lemon-yellow. Heavily gray to brown-gray pollinose except for the small polished spot on frontal triangle, the metanotum, and most of the lower pleuron, including the propleuron and lower portions of meso- and pteropleuron, all of which are smooth and polished black; face, cheek, upper half of pleuron, humerus and a suggestion of two sublateral stripes on mesonotum gray pollinose, the rest rather dark and dull brown-gray pollinose; abdomen sparsely and finely brown pollinose, subshining. Cephalic bristles and hairs bright yellow, except for the stout black postvertical bristles, which are well down on the occiput below the vertex and not easily seen; the 1 + 1 notopleurals, 1 postalar and two pairs of scutellar bristles short but stout and black; all mesonotal and pleural hairs short, but stouter than usual, yellowish, and rather conspicuous under the light, as described by Séguy for *S. aureopilosa*.

Frontal triangle large, equilateral, apex almost at anterior edge of front, the side margins scarcely distinct on the heavily pollinose front, approximately one row of small piliferous punctures on each half of the triangle. Front broad, over twice the width of an eye, and .56 times the width of the head, its length and breadth subequal. Cheek narrow, equal or less than diameter of a palp, less than half the width of third antennal segment, and one-tenth the height of the head; vibrissal angle nearly a right angle, not produced, the face approximately vertical. Facial carina short and strong, formed of a black, gray pollinose, triangular lower half and a yellow, slightly more elongate, triangular upper part, the apices of the two triangles meeting opposite the lower margin of third antennal segment. Eyes bare. Ocellar bristles erect and parallel, as short as hairs on triangle, bases well separated. Antenna small, third segment broader than long; arista microscopically pubescent, under high magnification.

Mesonotum with one or two rows of stout yellow hairs between the median and each dorsocentral row; mesopleuron with a few of these same stout hairs set in the gray pollen; disk of scutellum with short, black, appressed hairs. Scutellum of characteristic form, subquadrate, as broad across apex as across base, with four

stout black marginal scutellar bristles equally spaced at four angles on the posterior margin of the scutellum, the sides of the scutellum without bristles. Legs short. Wing clear, typical *Siphunculina* venation with short second costal sector and broadened first basal cell; second sector unusually short, only .7 the distance between the crossveins and one-fourth the length of the third sector; marginal cell extremely narrow, the second vein close to the first; submarginal cell long and broad, equal to or a bit wider than the first posterior cell; first basal cell broadened, equal to width of discal cell opposite it; small crossvein approximately at middle of discal cell, the cell not broadened distally, and the hind crossvein only very slightly oblique.

Length, 1.5 mm.

Holotype, male, Kware, Dec. 27-Jan. 13.

This species is quite near *S. aureopilosa* Séguy, described from Mt. Elgon in Kenya, having the same stout, short, yellow hairs and short second costal sector. However, besides the obvious character of the polished spot on the frontal triangle of *punctifrons*, the type of scutellum in *aureopilosa* is quite different, being subquadrate but narrow towards the apex, the apical pair of bristles well separated and on two angles of the hind margin, with two shorter subapical bristles along each side of the scutellum.

Kwarea n. gen.

Genotype: *Kwarea pallidihirta* Sabrosky, new species.

Subfamily Oscinellinae, with general habitus suggestive of some species of *Oscinella*, *Madiza* (*Siphonella*) and *Goniopsita*, but with distinctive chaetotaxy as follows: head bristles well developed, with both inner and outer verticals strong, three pairs of strong orbital bristles on upper half of front, ocellars proclinate and divergent, and the postvertical bristles straight, parallel and directed slightly caudad; 1 weak humeral, 1+1 strong notopleurals, 1 postalar, 1 posterior dorsocentral, and 1 apical and 1 subapical scutellar.

Frontal triangle not strongly delimited, the front outside the triangle shining; eye sparsely pubescent; face concave, with only a trace of median carina; cheek narrow, entirely pollinose, without dividing ridge; oral opening broader than long; proboscis short and fleshy; third antennal segment subreniform; arista pubescent. Mesopleuron without hairs. Scutellum short and broadly rounded as in *Oscinella*, the marginal bristles not on tubercles. Legs short and slender, the hind tibia with sensory area. Wing similar to *Oscinella*; first basal cell narrow, not broadened; hind crossvein

slightly oblique.

The relationship of the new species is not clear, but its characters are not consistent with any known genus, at least as currently conceived, and it seems necessary to erect a new genus for it. In my key to the genera of Oscinellinae (Sabrosky, 1951, op. cit., pp. 743-747), the combination of proclinate divergent ocellars and mesopleuron without hairs is found only in *Lasiopleura*, *Psilacrum* and *Stenoscinis* (in part), but *Kwarea* has little in common with those genera, except perhaps *Psilacrum*. *Kwarea* will key as far as couplet 11, which should be revised as follows:

11. Anal area of wing narrow, sometimes the anal margin almost paralleling the fifth vein; front with a distinctly narrow appearance, longer than broad *Stenoscinis* Malloch (in part)

Anal area of wing broad; front relatively short and broad, the breadth greater than or at most subequal to the length 11a

11a. Three pairs of strong orbital bristles on upper half of front; postvertical bristles straight, parallel, directed slightly caudad.

Kwarea Sabrosky

Orbitals short, hairlike, scarcely evident; postvertical bristles cruciate *Psilacrum* Becker

Kwarea pallidihirta n. sp.

Small, shining black species with short, pale, appressed hairs on mesonotum.

Male—Head with anterior third or more of front, face, cheek, palp, antenna and base of arista yellow, otherwise black. Thorax black, polished, with a pale gray prealar patch of pollen over the notopleuron, narrow adjacent areas of notum, and upper corner of mesopleuron, a narrow band of gray pollen on middle of mesopleuron, gray pollinose postalar callus, and darker gray scutellum; metanotum smooth, polished black. Abdomen brown, sparsely pollinose. Legs predominantly yellow, marked with brown, including an area on distal third of each femur, narrow band on basal third and a suggestion of a band on distal third of each tibia, all markings darker and broader on the hind leg. Wing clear, veins brown. Halter yellow. Bristles black except for the pale and weak humeral bristle and vibrissae; hair of front, mesonotum, and scutellum short, pale, appressed.

Head broader than thorax; front approximately twice the width of an eye and as long as broad at the vertex, narrowing slightly anteriorly; front shining (the German "fettglänzend"), the frontal triangle poorly delimited, two-thirds the length of the front, smooth

and polished; ocellar tubercle obscurely dark pollinose, with a small area of pollen extending anterolaterad from it on each side of the median ocellus; eye large, in profile occupying most of the head; cheek narrow, one-third the breadth of the third antennal segment; palp large, projecting anteriorly beyond the oral margin (possibly only a male character!).

Mesonotum rather thickly set with fine piliferous punctures, which scarcely interrupt the shining appearance. Scutellum as in *Oscinella*, short and broadly rounded, two-thirds as long as broad, the apical bristles well separated at their bases, and cruciate at tips, each 1.67 times as long as a subapical bristle, the latter inserted midway between the apical bristle and the base of the scutellum.

Wing venation similar to *Oscinella*; second and third veins gently curving toward costa, the fourth straight and ending at apex of wing, the third and fourth weakly divergent, especially on distal half; length of costal sectors two to four as 18:8:6.5; discal cell short, widening slightly distad, the fore crossvein beyond the middle of the cell; distance between crossveins slightly greater than penultimate section of third vein but only two-thirds the length of ultimate section of fifth vein.

Length, 1.5–1.75 mm.

Holotype and paratype, both males, Kware, Jan. 17–21, the type also bearing a handwritten label "17.I.52. Bei Baumtermitten." Holotype in Stuttgart Museum, paratype in U. S. National Museum.

Note on *Catocala clintoni* Grt.—On a short trip to the Ozarks with friends, I was fortunate enough to capture a female of *Catocala clintoni* at Hot Springs, Arkansas on May 24, 1953. The moth was pretty well worn and weak, but I secured a few eggs anyway. The weather was hot, always in the nineties. I kept the eggs as cool as I could while travelling, but they hatched on May 30 or 31 and died before I discovered them. Nor did I know the food plant at the time, so it is doubtful that I would have been able to keep them, considering the heat and lack of facilities. Mr. E. A. Dodge in describing the life history (Can. Ent. XXXIII, p. 221, 1901) fed larvae on plum, but added that he later found a mature larva on apple. His ova laid over from June 21, 1900 to April 17, 1901. This seemingly premature larval emergence from my specimen is not without precedent, for my friend, Mr. V. G. Sasko had a similar experience with eggs of *Catocala sappho* a number of years ago.—ALEX. K. WYATT, Chicago, Illinois.